

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-14 (Cancelled without prejudice or disclaimer).

15. (Currently Amended) A method for operating an optical reader having an image sensor, said method comprising the steps of:

switching operation of said reader to a low resolution mode of operation; and

in said low resolution mode, clocking out electrical signals corresponding to some ~~pixel values~~ pixels of said image sensor at a higher than normal clock out rate so that an overall frame clock out rate is increased.

16. (Currently Amended) The method of claim 15, wherein said ~~clock~~ clocking out step includes the steps of ~~clock~~ clocking out some rows of said image sensor array at a normal clock out rate and other rows of said image sensor at a higher than normal clock out rate.

17. (Currently Amended) The method of claim 15, wherein said image sensor includes a discharge function actuated by activation of a discharge control ~~signals~~ signal, wherein said ~~clock~~ clocking out step include the step of intermittently activating said discharge control signal while ~~clock~~ clocking out a frame of image data.

Claims 18-30 (Cancelled without prejudice or disclaimer).

Please add the following claims:

31. (New) The method of claim 15, wherein said switching step includes the step of actuating a trigger to switch operation of said optical reader from an idle state.

32. (New) The method of claim 15, wherein said low resolution clocking out step includes the step of utilizing a discharge clock out control signal.

33. (New) The method of claim 15, wherein said low resolution mode clocking out step includes the step of utilizing a CCD image sensor.

34. (New) The method of claim 15, wherein said low resolution clocking out step includes the step of utilizing a 2D CCD image sensor.

35. (New) The method of claim 15, wherein said low resolution clocking out step includes the step of utilizing a CCD image sensor having a row of pixels.

36. (New) The method of claim 15, wherein said low resolution clocking out step includes the step of utilizing a CMOS image sensor.

37. (New) The method of claim 15, wherein said low resolution clocking out step includes the step of utilizing a 2D CMOS image sensor.

38. (New) The method of claim 15, wherein said low resolution clocking out step includes the step of utilizing a 2D image sensor configured so that pixels of said image sensor may be selectively clocked out.

39. (New) The method of claim 15, wherein said low resolution clocking out step includes the step of varying a pixel clock out rate of said image sensor with use of control signals input into said image sensor.

40. (New) The method of claim 15, wherein said image sensor is a 2D image sensor, and wherein said low resolution mode clocking out step includes the step of varying a pixel clock out rate of said image sensor during the source of clocking out a frame of image data.

41. (New) The method of claim 15, wherein said low resolution clocking out step includes the steps of utilizing a 2D CCD image sensor, and of controlling a control signal input to said image sensor to vary a pixel clock out rate of said image sensor during the course of clocking out a frame of image data.

42. (New) The method of claim 15, wherein said image sensor is a 2D image sensor having a plurality of rows of pixels, and wherein said low resolution clocking out step includes the step of clocking out electrical signals corresponding to at least one row of pixels of said image sensor at a normal clock out rate.

43. (New) The method of claim 15, further including the step of reading valid pixel values of a frame of image data developed during said low resolution mode to determine an operation parameter of said optical reader.

44. (New) The method of claim 15, further including the step of reading valid pixel values of a frame of image data developed during operation of said reader in said low resolution mode to determine an operating parameter of said optical reader, utilizing said operating parameter to obtain a frame of image data, and decoding a decodable symbol represented in said frame of image data obtained utilizing said operating parameter.

45. (New) The method of claim 15, wherein said method further includes the steps of reading valid pixel values of a frame of image data obtained during operation of said reader in said low resolution mode to determine an operating parameter of said optical reader.

46. (New) The method of claim 15, wherein said method further includes the steps of automatically changing operation of said optical reader to a normal resolution mode of operation after said optical reader clocks out predetermined number of low resolution frames of image data from image sensor while operation in said low resolution mode of operation.

47. (New) The method of claim 15, wherein said method further includes the steps of automatically changing operation of said optical reader to a normal resolution mode of operation after an operating parameter of said optical reader is determined.

48. (New) The method of claim 15, wherein said method further includes the step of automatically changing operation of said optical reader to a normal resolution mode of operation after a plurality of frames of image data are clocked out in said low resolution mode of operation, said optical reader having a frame clock out period of about 33.37 ms in said normal resolution mode of operation.

49. (New) The method of claim 15, wherein said method further includes the step of automatically changing operation of said optical reader to a normal resolution mode of operation after a plurality of frames of image data are clocked out in said low resolution mode of operation, and attempting to decode a decodable symbol represented in a frame of image data captured while said optical reader operates in said normal resolution mode of operation.

50. (New) The method of claim 15, wherein said low resolution clocking out step includes the step of clocking out electrical signals corresponding to pixels of said image sensor of at least two speeds during the course of clocking out a single frame of image data.

51. (New) A method for operating an optical reader having an image sensor, said method comprising the steps of:

clocking out at least one frame of image data in a low resolution frame clock out mode of operation;

reading pixel values from said at least one frame clocked out in said low resolution clock out mode to determine an operating parameter of said reader;

utilizing said operating parameter in developing a frame of image data; and

decoding a decodable symbol representation represented in said frame of image data developed utilizing said operating parameter.

52. (New) The method of claim 51, wherein said low resolution mode clocking out step includes the step of clocking out electrical signals corresponding to some pixel values of said image sensor at a higher than normal clock out rate so that an overall frame clock out rate is increased.

53. (New) The method of claim 51, wherein said low resolution mode clocking out step includes the steps of clocking out some rows of said image sensor array at a normal clock out rate and other rows of said image sensor at a higher than normal clock out rate.

54. (New) The method of claim 51, wherein said low resolution mode clocking out step includes the step of selectively clocking out electrical signals corresponding to some pixels of said image sensor and not clocking out electrical signals corresponding to other pixels of said image sensor.

55. (New) The method of claim 51, wherein said image sensor includes a discharge function actuated by activation of a discharge control signal, wherein said low resolution mode clock out step includes the step of intermittently activating said discharge control signal while clocking out a frame of image data.

56. (New) The method of claim 51, wherein said utilizing step includes the step of utilizing said operating parameter in developing a first frame of a succession of frames of image data clocked out by said optical reader that is not clocked out in said low resolution mode of operation.

57. (New) The method of claim 51, wherein said utilizing step includes the step of communicating said operating parameter to said image sensor.

58. (New) The method of claim 51, wherein said operating parameter is an exposure parameter value.

59. (New) The method of claim 51, wherein said operating parameter is an illumination intensity value.

60. (New) The method of claim 51, wherein said reading step includes the step of reading pixel values from a memory device.

61. (New) The method of claim 51, wherein said operating parameter is an illumination on-time value.

62. (New) The method of claims 51, wherein said operating parameter is an amplifier gain parameter value.

63. (New) The method of claim 51, wherein said operating parameter is a dark level adjustment value.

64. (New) The method of claim 51, wherein said operating parameter is a light level adjustment value.

65. (New) The method of claim 51, further comprising the step of decoding a decodable symbol representation represented in a frame of image data developed utilizing said operating parameter.

66. (New) The method of claim 51, wherein said low resolution mode clocking out step of producing a low resolution parameter determination frame of image data in which valid and invalid data zones are defined by rows of said image sensor.

67. (New) The method of claim 51, wherein said low resolution clocking out step includes the step of producing a low resolution parameter determination frame of image data in which a first valid zone includes pixel positions corresponding to pixels of row proximate first row of said image sensor, a second valid zone includes pixel positions corresponding to

pixels of row proximate a center row of image sensor, and a third valid zone includes pixel positions corresponding to pixels of row proximate a last row of said image sensor.

68. (New) The method of claim 51, wherein said low resolution mode clocking out step includes the step of clocking out at least three frames of image data from an image sensor that includes a one frame buffer.

69. (New) The method of claim 51, wherein said low resolution mode clocking out step includes the step of clocking out said frame of image data from a CCD image sensor.

70. (New) The method of claim 51, wherein said low resolution mode clocking out step includes the step of clocking out said frame of image data from a 2D CCD image sensor.

71. (New) The method of claim 51, wherein said method further includes the step of actuating a trigger, and wherein said low resolution clock out step, said reading step and said decoding steps are automatically executed in response to said actuating of said trigger.

72. (New) The method of claim 51, wherein said utilizing step includes the step of commencing said utilizing step after a predetermined number of frames subsequent to a trigger actuation have been clocked out by said optical reader while operating in accordance with said low resolution frame clock out mode of operation.

73. (New) The method of claim 51, wherein said utilizing step includes the step of operating said optical reader in a normal resolution clock out mode of operation.

74. (New) The method of claim 51, wherein said utilizing step includes the step of operating said optical reader in a normal resolution clock out mode of operation in which a frame clock out period is about 33.37 ms.

75. (New) The method of claim 51, wherein said utilizing step includes the step of clocking out electrical signals corresponding to every pixel of said image sensor.

76. (New) The method of claim 51, wherein said low resolution clock out step includes the step of clocking out a plurality of frames of image data, wherein said reading step includes the step of determining an exposure parameter, and wherein said utilizing step includes the step of utilizing said exposure parameter in developing said frame of image data.

77. (New) The method of claim 51, wherein a frame clock out period of said image sensor in said low resolution mode clocking out step is less than half of a duration of a frame clock out period of said image sensor when said frame that is subject to decoding is clocked out.

78. (New) The method of claim 51, wherein said low resolution clock out step includes the step of avoiding attempting to decode decodable symbols represented in frames of image data clocked out in said low resolution clock out mode.

79. (New) The method of claim 51, wherein said utilizing step includes the step of utilizing said operating parameter in developing a first frame of image data obtained after a trigger actuation that is to be subject to decoding.

80. (New) The method of claim 51, wherein said low resolution mode clocking out step includes the step of varying a speed at which pixels are clocked out during the course of clocking out said at least one frame of image data.

81. (New) The method of claim 51, wherein said low resolution mode clocking out step includes the step of clocking out electrical signals corresponding to a first set of pixels of said image sensor at a first speed, and clocking out electrical signals corresponding to a second set of pixels of said image sensor at a second speed.

82. (New) The method of claim 51, wherein said low resolution mode clock out step includes the step of clocking out at least one pixel of said image sensor at a speed inappropriate for allowing generation of an electrical signal that accurately represents light incident on said at least one pixel.

83. (New) The method of claim 51, wherein said low resolution mode clock out step includes the step of not clocking out electrical signals corresponding to some of said pixels of said image sensor.

84. (New) The method of claim 51, wherein said low resolution mode clocking out step includes the step of utilizing a CMOS image sensor.

85. (New) The method of claim 51, wherein said low resolution mode clocking out step includes the step of utilizing a 2D CMOS image sensor.

86. (New) The method of claim 51, wherein said low resolution mode clocking out step includes the step of utilizing a 2D image sensor configured so that pixels of said image sensor may be selectively clocked out.

87. (New) The method of claim 51, wherein said low resolution mode clocking out step includes the step of clocking out a plurality of pixels of said image sensor at speeds inappropriate for allowing generation of electrical signals that accurately represent light incident on said plurality of pixels.

88. (New) The method of claim 51, wherein said low resolution mode clocking out step includes the step of clocking out certain pixels of said image sensor at a normal pixel clock out rate appropriate for allowing generation of electrical signals accurately representing light incident on said certain pixels.

89. (New) The method of claim 51, further including the step of wearing said optical reader on a finger.

90. (New) The method of claim 51, wherein said low resolution clocking out step includes the step of clocking out certain pixels of said image sensor at speeds inappropriate for allowing development of electrical signals accurately representing light incident on said pixels.

91. (New) An optical reader comprising:
an imaging assembly having an image sensor;
a controller, wherein said controller is adapted to clock out at least one low resolution frame of image data, wherein said controller is adapted to read pixel values from said at least one low resolution frame of image data to determine an operating parameter of said reader, wherein said controller is adapted to utilize said operating parameter in developing a frame of image data, and wherein said controller is further adapted to decode a decodable symbol representation represented in said frame of image data developed utilizing said operating parameter.

92. (New) The optical reader of claim 91, wherein said optical reader includes an illumination assembly having a light emitting diode.

93. (New) The optical reader of claim 91, wherein said optical reader is hand held.

94. (New) The optical reader of claim 91, wherein said optical reader is a presentation reader.

95. (New) The optical reader of claim 91, wherein said optical reader includes a laser light source directing light from said optical reader toward a target.

96. (New) The optical reader of claim 91, wherein said controller develops said low resolution frame of image data by clocking out electrical signals corresponding to some pixels of said image sensor at a higher than normal rate.

97. (New) The optical reader of claim 91, wherein said controller clocks out said low resolution frame of image data by not clocking out electrical signals corresponding to some pixels of said image sensor.

98. (New) The optical reader of claim 91, wherein said operating parameter is an exposure parameter value.

99. (New) The optical reader of claim 91, wherein said operating parameter is an illumination intensity value.

100. (New) The optical reader of claim 91, wherein said operating parameter is an illumination on-time value.

101. (New) The optical reader of claim 91, wherein said operating parameter is an amplifier gain parameter value.

102. (New) The optical reader of claim 91, wherein said operating parameter is a dark level adjustment value.

103. (New) The optical reader of claim 91, wherein said operating parameter is a light level adjustment value.

104. (New) The optical reader of claim 91, further comprising an illumination assembly.

105. (New) The optical reader of claim 91, further comprising a memory device storing said pixel values, wherein said controller, when reading said pixel values to determine said operating parameter reads said pixel values from said memory device.

106. (New) The optical reader of claim 91, further comprising an illumination assembly, wherein said illumination assembly comprises at least one white LED.

107. (New) The optical reader of claim 91, further comprising an illumination assembly, wherein said illumination assembly comprises a laser light source.

108. (New) The optical reader of claim 91, further comprising a wireless communication link.

109. (New) The optical reader of claim 91, further comprising a hand held housing, wherein said image sensor is a 2D image sensor disposed in said housing.

110. (New) The optical reader of claim 91, further comprising a hand held housing encapsulating said image sensor, a display, and a keyboard.

111. (New) The optical reader of claim 91, wherein said optical reader is adapted so that when actuated to decode a decodable symbol, said controller operates said image sensor at a first frame rate for a predetermined time and then automatically changes a frame rate of said image sensor from said first frame rate to a second frame rate.

112. (New) The optical reader of claim 91, wherein said optical reader is configured so that when actuated to decode a decodable symbol, said controller operates said image sensor at a first frame rate for a plurality of frame clock out periods and then automatically changes a frame rate of said image sensor from said first frame rate to a second frame rate, said second frame rate being slower than said first frame rate.

113. (New) The optical reader of claim 91, wherein said optical reader is adapted so that when actuated to decode a decodable symbol, said controller operates said image sensor at a first frame rate for a plurality of frame clock out periods and then automatically changes a frame rate of said image sensor from said first frame rate to a second frame rate of about 30 frames per second, said second frame rate being slower than said first frame rate.

114. (New) The optical reader of claim 91, wherein said image sensor is a 2D CCD image sensor configured to receive control signals that change a frame rate thereof.

115. (New) The optical reader of claim 91, wherein said optical reader includes a housing and a trigger, and wherein said optical reader is adapted so that when said trigger is actuated, said optical reader automatically clocks out a plurality of said low resolution frames of image data followed by at least one normal resolution frame of image data, and wherein said optical reader further in response to said trigger being actuated determines said operating parameter of said optical reader by reading pixel values of at least one of said plurality of low resolution frames of image data.

116. (New) The optical reader of claim 115 wherein said trigger is proximate said housing.

117. (New) The optical reader of claim 91, wherein said optical reader includes a trigger, and wherein said optical reader is adapted so that when said trigger is actuated, said optical reader automatically clocks out a plurality of low resolution frames of image data followed by at least one normal resolution frame of image data, and wherein said optical reader further in response to said trigger being actuated determines an exposure parameter of said optical reader by reading pixel values of at least one of said plurality of low resolution frames of image data.

118. (New) The optical reader of claim 91, wherein a frame rate associated with said at least one low resolution frame of image data is faster than a frame rate associated with said frame that is subjected to decoding.

119. (New) The optical reader of claim 91, wherein said image sensor is a 2D CMOS image sensor.

120. (New) The optical reader of claim 91, wherein said image sensor comprising a one frame buffer.

121. (New) The optical reader of claim 91, wherein said at least one low resolution frame of image data is not subject to decoding.

122. (New) The optical reader of claim 91, wherein said frame of image data developed utilizing said operating parameter is a first frame of a succession of frames of image data clocked out by said controller that is not a low resolution frame of image data.

123. (New) The optical reader of claim 91, wherein said controller when utilizing said operating parameter in developing said frame of image data communicates said operating parameter to said image sensor.

124. (New) The optical reader of claim 91, further comprising a trigger and a hand held housing encapsulating said image sensor, wherein said image sensor is a 2D image sensor, and wherein said optical reader is adapted so that when said trigger is actuated, said optical reader automatically clocks out said at least one low resolution frame of image data followed by said frame of image data developed utilizing said operating parameter, wherein said optical reader is adapted so that said frame of image data developed utilizing said operating parameter has a larger number of pixel values representative of light on a pixel of said 2D image sensor than said at least one low resolution frame of image data.

125. (New) The optical reader of claim 124, wherein said controller in clocking out said at least one low resolution frame of image data clocks out electrical signals corresponding to some pixels of said 2D image sensor at a higher than normal clock out rate so that an overall frame clock out rate is increased.

126. (New) The optical reader of claim 124, wherein said controller in clocking out said at least one low resolution frame of image data clocks out some rows of said 2D image sensor at a normal clock out rate and other rows of said 2D image sensor at a higher than normal clock out rate.

127. (New) The optical reader of claim 124, wherein said controller in clocking out said at least one low resolution frame of image data selectively clocks out electrical signals corresponding to only some pixels of said 2D image sensor without clocking out electrical signals corresponding to other pixels of said 2D image sensor.

128. (New) The optical reader of claim 124, wherein said 2D image sensor includes a discharge function actuated by activation of a discharge control signal, wherein said controller in clocking out said at least one low resolution frame of image data intermittently activates said discharge control signal while clocking out a frame of image data.

129. (New) The optical reader of claim 124, wherein said operating parameter is an exposure parameter value.

130. (New) The optical reader of claim 124, wherein said operating parameter is an illumination intensity value.

131. (New) The optical reader of claim 124, wherein said operating parameter is an illumination on-time value.

132. (New) The optical reader of claim 124, wherein said operating parameter is an amplifier gain parameter value.

133. (New) The optical reader of claim 124, wherein said operating parameter is a dark level adjustment value.

134. The optical reader of claim 124, wherein said operating parameter is a light level adjustment value.

135. (New) The optical reader of claim 124, wherein said at least one low resolution frame of image data includes valid and invalid data zones, said valid and invalid zones being defined by rows of said image sensor.

136. (New) The optical reader of claim 124, wherein said at least one low resolution frame of image data includes a plurality of valid and invalid data zones, wherein a first valid zone includes pixel positions corresponding to pixels of a row proximate first row said 2D image sensor, a second valid zone includes pixel positions corresponding to pixels of a row proximate a center row of said 2D image sensor, and a third valid zone includes pixel positions corresponding to pixels of a row proximate a last row of said 2D image sensor.

137. (New) The optical reader of claim 124, wherein said at least one low resolution frame of image data includes a plurality of valid and invalid data zones, wherein at least one valid zone includes pixel positions corresponding to pixels of less than a complete row of pixels of said 2D image sensor.

138. (New) The optical reader of claim 124, wherein said at least one low resolution frame of image data includes a plurality of valid and invalid data zones, said valid zones being spaced apart from one another, and each of said valid zones including pixel positions corresponding to a complete row of pixels of said 2D image sensor.

139. (New) The optical reader of claim 124, wherein said controller in clocking out said at least one low resolution frame of image data clocks out at least three low resolution frames of image data.

140. (New) The optical reader of claim 124, wherein said controller in clocking out said at least one low resolution frame of image data clocks out electrical signals corresponding to certain rows of pixels said 2D image sensor in such manner that said electrical signals represent light incident on said pixels without generating received light indicating electrical signals for remaining rows of pixels of said 2D image sensor.

141. (New) The optical reader of claim 124, wherein said 2D image sensor is a CCD image sensor.

142. (New) The optical reader of claim 124, wherein said 2D image sensor is a CMOS image sensor.

143. (New) The optical reader of claim 124, wherein said controller, in determining said operating parameter reads pixel values corresponding to pixel positions of said low resolution frame of image data, said pixel positions read by said controller in determining said operating parameter including pixel positions corresponding to pixels of: (a) a row proximate a first row of pixels of said image sensor; (b) a row proximate a center row of pixels of said image sensor; and (c) a row proximate a last row of pixels of said image sensor.

144. (New) The optical reader of claim 124, wherein a frame clock out period of said 2D image sensor when clocking out said frame of image data developed utilizing said operating parameter is about 33.37 ms.

145. (New) The optical reader of claim 124, wherein said controller in clocking out frame of image data developed utilizing said operating parameter clocks out electrical signals corresponding to each pixel of said image sensor.

146. (New) The optical reader of claim 134, wherein said controller, in clocking out said at least one low resolution frame of image data clocks out a plurality of frames of image data and, wherein said controller, in determining said operating parameter determines an exposure parameter.

147. The optical reader of claim 124, wherein a frame clock out period associated with said low resolution frame of image data is less than half of a duration of a frame clock out period associated with said high resolution frame clock out period.

148. (New) The optical reader of claim 124, wherein said controller in clocking out said at least one low resolution frame of image data varies a speed at which pixels are clocked out during the course of clocking out said at least one low resolution frame of image data.

149. (New) The optical reader of claim 124, wherein said controller in clocking out said low resolution frame of image data clocks out electrical signals corresponding to a first set of pixels of said 2D image sensor at a first speed, and clocks out electrical signals corresponding to a second set of pixels of said image sensor at a second speed.

150. (New) The optical reader of claim 124, wherein said controller in clocking out said low resolution frame of image data clocks out electrical signals corresponding to at least one pixel of said 2D image sensor at a speed that is inappropriate for allowing generation of an electrical signal that accurately represents light incident on said at least one pixel.

151. (New) The optical reader of claim 124, wherein said controller in clocking out said low resolution frame of image data does not clock out electrical signals corresponding to some pixels of said 2D image sensor.

152. (New) The optical reader of claim 124, wherein said 2D image sensor is adapted so that pixels of said 2D image sensor may be selectively clocked out.

153. (New) The optical reader of claim 124, wherein said controller in clocking out said low resolution frame of image data clocks out electrical signals corresponding to a plurality of pixels of said image sensor at speeds inappropriate for allowing generation of electrical signals that accurately represent light incident on said plurality of pixels.

154. (New) The optical reader of claim 124, wherein said controller in clocking out said low resolution mode frame of image data clocks out certain pixels of said image sensor at a normal pixel clock out rate appropriate to allow generation of electrical signals accurately representing light incident on said certain pixels.

155. The optical reader of claim 124, wherein said controller in clocking out said low resolution mode frame of image data clocks out certain pixels of said image sensor at speeds inappropriate for allowing development of electrical signals accurately representing light incident on said certain pixels.

156. (New) The optical reader of claim 124, wherein said operating parameter is an exposure parameter value.

157. (New) The optical reader of claim 124, wherein said operating parameter is an illumination intensity value.

158. (New) The optical reader of claim 124, wherein said operating parameter is an illumination on-time value.

159. (New) The optical reader of claim 124, wherein said operating parameter is an amplifier gain parameter value.

160. (New) The optical reader of claim 124, wherein said operating parameter is a dark level adjustment value.

161. (New) The optical reader of claim 124, wherein said operating parameter is a light level adjustment value.

162. (New) The optical reader of claim 124, wherein said imaging assembly includes an illumination assembly.

163. (New) The optical reader of claim 124, wherein said optical reader includes an illumination assembly, and wherein said illumination assembly comprises at least one LED.

164. (New) The optical reader of claim 124, wherein said optical reader includes an illumination assembly, and wherein said illumination assembly comprises at least one white LED.

165. (New) The optical reader of claim 124, wherein said optical reader includes an illumination assembly, and wherein said illumination assembly comprises a laser light source.

166. (New) The optical reader of claim 124, wherein said optical reader includes a wireless communication link.

167. (New) The optical reader of claim 124, wherein said frame of image data developed utilizing said operating parameter is a first frame of a succession of frames of image data clocked out by said controller that is not a low resolution frame of image data.

168. (New) The optical reader of claim 124, wherein said controller when utilizing said operating parameter in developing said frame of image data communicates said operating parameter to said image sensor.

169. (New) The optical reader of claim 124, wherein said low resolution frame of image data includes a plurality of pixel values that are not representative of light incident on a pixel.

170. (New) The optical reader of claim 124, further comprising a memory device storing said pixel values that are read by said controller when determining said operating parameter.